REMARKS/ARGUMENTS

Claims 50-56 are currently pending in this application.

Claim Rejections - 35 USC §102(b)

Claim 50 stands rejected under 35 USC § 102(b) as being anticipated by Groth et al. (U.S. Patent No. 4,494,238).

The present invention is a transmitter and a corresponding method for transmitting a spread spectrum CDMA signal while shifting the signal spectrum to the edge of the spectrum bandwidth.

Claim 50 of the present invention discloses a transmitter comprising "a single-sideband modulator for shifting the signal spectrum to the edge of the spectrum bandwith". The Examiner asserts Groth anticipates this disclosure. The Applicant respectfully disagrees.

Groth discloses a communication system for transmitting and receiving a plurality of spread spectrum carrier channels. The Examiner has focused on a code clock acquisition and corrector loop device 104 of the receiver shown in Figure 1, and shown in greater detail in Figure 8. Groth describes at column 11, lines 9-13 that the circuit 104 comprises a single side band modulator. However, the Applicant disagrees that the single sideband modulator as claimed is anticipated by Groth. The single side band modulator disclosed in Groth is different than the claimed single sideband modulator in that it is configured within a receiver to provide for "code clock offset equal to search rate, up or down, for code search and acquisition purposes" (column 11, lines 10-12). In contrast, the claimed invention pertains to a transmitter, with a single sideband modulator used to shift the signal spectrum to the edge of the spectrum bandwidth. Thus, the modulator of Groth is part of a different device, i.e., a receiver versus a transmitter, and configured within that device in a totally unrelated manner to the claimed invention. The sideband modulator in Groth is configured to search for codes of the received channels, while the claimed transmitter with a single sideband modulator is configured to alter the communication signal to be transmitted for improving signal to noise ratio. As such, the modulator in Groth does not anticipate claim 50.

A reading of the Groth disclosure with respect to the transmitter reveals that it produces 20 simultaneous channels (col. 19, line13) within a predetermined bandwidth, using 20 parallel circuits as part of the transmitter synthesizer group 26 (Fig. 2), each including a voltage controlled oscillator 338i, a multiplier 344i, a multiplier 348i and a multiplier 352i (Fig. 3, col. 7, lines 14-30). This transmitter configuration does not teach or suggest the elements of the claimed invention. Consequently, Groth does not anticipate claim 50 of the present invention.

Claim Rejections - 35 USC §103(a)

Claims 51-56 are rejected under 35 USC § 103(a) as being unpatentable over Groth in view of Dent (U.S. Patent No. 5,351,016).

With regard to the Examiner's rejection of claims 51-56 over Groth, the Applicant disagrees for the reasons set forth above with respect to Groth.

With respect to Dent, Dent discloses a self-adjusting quadrature modulator for improving the accuracy with which digital data is impressed on a RF carrier. More particularly, a digital modulation generator (110) is digitally corrected by DSP2 (125), and a quadrature modulator 114 receives corrected values of I and Q after digital to analog conversion (112, 113). The objective of Dent is to remove modulation inaccuracies introduced by modulator imbalance (col. 4, line 26) and non-linearity in modulators and modulation generators (col. 4 lines 37-39; col. 5 lines 59-63). Dent is narrowly focused on correcting modulation inaccuracies, and does not address the problem of improving signal to interference ratio of transmission signals.

In contrast, independent 52 and 55 of the present invention include a limitation whereby the signal spectrum is shifted to the edge of the spectrum bandwidth. As explained in the description of the present application on page 3, lines 3-6, this shifting of the signal spectrum to the edge of the bandwidth prior to transmission is advantageous because the receiver noise is less at this region of the bandwidth.

Accordingly, it is respectfully submitted that claims 52 and 55 are not obvious over Groth in view of Dent.

Claims 51, 53, 54, 56 are dependent upon claims 50, 52 and 55 respectively which the Applicant believes are allowable over the cited prior art of record for the same reasons provided above.

Conclusion

Based on the arguments presented above, withdrawal of the 35 USC § 102(b) rejection of claim 50 and the 35 USC § 103(a) rejection of claims 51-56 is respectfully requested.

If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

In view of the foregoing remarks, Applicants respectfully submit that the present application, including claims 50-56, is in condition for allowance and a notice to that effect is respectfully requested.

Respectfully submitted,

Timothy F. Moore, III

By____________________
Anthony L. Venezia
Patent Agent
Registration No. 48,382

Volpe and Koenig, P.C.
United Plaza, Suite 1600
30 South 17th Street
Philadelphia, PA 19103
Telephone: (215) 568-6400
Facsimile: (215) 568-6499

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Enclosure